

**MINUTES**  
**CALIFORNIA TRAFFIC CONTROL DEVICES COMMITTEE (CTCDC)**  
**MEETING San Rafael, May 06, 2004**

The second CTCDC meeting of year 2004 was held in San Rafael, on May 06, 2004.

Chairman John Fisher opened the meeting at 9:45 a.m. with the introduction of Committee Members and guests. Chairman Fisher thanked Farhad Mansourian for hosting the meeting. The following Members, alternates and guests were in attendance:

<b><u>ATTENDANCE</u></b>	<b><u>ORGANIZATION</u></b>	<b><u>TELEPHONE</u></b>
<b>Members (Voting)</b>		
John Fisher Chairman	League of CA Cities City of Los Angeles	(213) 580-1189
Farhad Mansourian Vice Chairman	CA State Association of Counties Marin County	(415) 499-6570
Gerry Meis	Caltrans	(916) 654-4551
John Olejnik (Alternate)	CHP	(916) 657-7222
Ed von Borstel	League of CA Cities City of Modesto	(209) 577-5266
Merry Banks	California State Automobile Association	(415) 241-8904
Jacob Babico	CA State Association of Counties San Bernardino County	(909) 387-8186
Hamid Bahadori	Auto Club of Southern California	(714) 885-2326
<b><u>ALTERNATES</u></b>	<b><u>ORGANIZATION</u></b>	<b><u>TELEPHONE</u></b>
Mark Greenwood	League of CA Cities City of Palm Desert	(760) 776-6450
Gain Aggarwal	League of CA Cities City of Vacaville	(707) 449-5349 gaggarwal@ci.vacaville.ca.us

**ATTENDEES**

**ORGANIZATION**

**TELEPHONE/E-Mail**

Johnny Bhullar	Caltrans	Johnny_Bhullar@dot.ca.gov
Ted Cohn	U.C. Berkeley	tecohn@berkeley.edu
Scott Roesener	P.G & E	sxrp@pge.com
Matt Schmitz	FHWA	matthew.schmitz@fhwa.dot.gov
Maurice Palumbo	Golden Gate Bridge Hwy & Transportation Dist.	<a href="mailto:mpalumbo@goldengate.org">mpalumbo@goldengate.org</a>
Pat Echols	Town of Tiburon	pechols@ci.tiburon.ca.us
Kevin Schumacher	CPUC	shk@cpuc.ca.gov
Dennis Anderson	3M	d-anderson@mmm.com
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Jerry Williams	BlinkerStop	<a href="mailto:jerrysmail@pacbell.net">jerrysmail@pacbell.net</a>
Rick Bergholz	Tapco	<a href="mailto:rickb@tapconet.com">rickb@tapconet.com</a>
Dale Jones	BlinkerStop	dale@newlite.com
David Royer	Univ. of California	<a href="mailto:droyer@earthlink.net">droyer@earthlink.net</a>
Debra Sue Johnson	Town of Corte Madera	<a href="mailto:djohnson@ci.corte-madera.ca.us">djohnson@ci.corte-madera.ca.us</a>
Frank Markowitz	San Francisco Parking & Traffic	<a href="mailto:frank.morkowitz@sfgov.org">frank.morkowitz@sfgov.org</a>
Hassan Aboukhadigeh	Caltrans	<a href="mailto:haboukha@dot.ca.gov">haboukha@dot.ca.gov</a>
Matt Schmitz	FHWA	<a href="mailto:Mathew.schmitz@fhwa.dot.gov">Mathew.schmitz@fhwa.dot.gov</a>
Ed Campbell	Polara Engineering Traffic Safety corp.	<a href="mailto:ed_campbell@sbcglobal.net">ed_campbell@sbcglobal.net</a>
Roger Bazely	SF, PTA	<a href="mailto:gazele@earthlink.net">gazele@earthlink.net</a>
Jack Baker	Marin Co. DPW	
David Parisi	ITE-San Francisco Bay Area Section	<a href="mailto:david@parisi-associates.com">david@parisi-associates.com</a> (415) 388-8978

## **MINUTES**

Adoption of January 22, 2004 CTCDC meeting minutes.

**Motion:** Moved By Jacob Babico, seconded by Ed von Borstel, to adopt the Minutes of January 22, 2004 CTCDC meeting held in San Bernardino. Motion carried 8-0.

### **Public Comments:**

Sargent Donna Douglas, California Highway Patrol (CHP) stated that CHP has initiated a “drive safely” program that is called neighborhood traffic safety program. Under this program a sign, “Warning Community Traffic Enforcement Area, Drive Safely” would be installed on local streets in the neighborhood which participate in the program. This is a cooperative effort between the CHP and the residents of California to promote, public safety, service to the public, community involvement in traffic safety, safety education. This program was created in response to community concerns relative to traffic safety. The program focused working together in a cooperative effort to enhance public safety in the communities. CHP and residents develop a strategic plan to reduce traffic violations and associated motor vehicle collisions. The program involves both education and enforcement, with a simple, but imperative objective; ensure communities are safe place in which to drive and live.

The neighborhood traffic safety program places CHP resources in areas where residents desire and have specially requested an enhanced law enforcement presence. CHP involvement can include attendance at neighborhood meeting, traffic safety education, assistance in developing strategic neighborhood traffic safety plans, working with news media to increase public awareness and enhance enforcement programs and CHP presence. This program also provide opportunity for residents to become actively involved in traffic safety and in directing CHP resources and enforcement efforts in their community.

The mission of this program is to ensure safety and provide services to the public as they utilize the highway transportation system and to assist local government during emergencies when requested. The objectives of this program are accident prevention, emergency incident/traffic management, law enforcement services and assistance to local residents.

Gerry Meis commented that he does not support the idea, because every roadway is subject to the enforcement. He added that the motorists would not be able to process the message if there are cluster of signs. The fewer signs are better for the travelling motorists to deal-with and understand the message. The sign would not be installed on State highway.

Chairman Fisher agreed with Gerry’ comments, however he also appreciated the CHP efforts and suggested that sign might be useful in safety corridors.

Jacob Babico asked if a roadway is under the enforcement of local police department, how CHP will implement this program.

John Olejnik responded that the program primarily would be implemented in unincorporated areas where CHP has enforcement agreement.

Chairman Fisher suggested that CHP request placing this item on the next CTCDC meeting agenda as a “discussion item.”

Chairman Fisher asked for other public comments.

Mike Sallabery, San Francisco Department of Parking and Traffic took the opportunity to update the Committee members on the bicycle pavement marking during the public comments period. Mike provided a handout to the Committee members which contains the suggested language for the California Supplement.

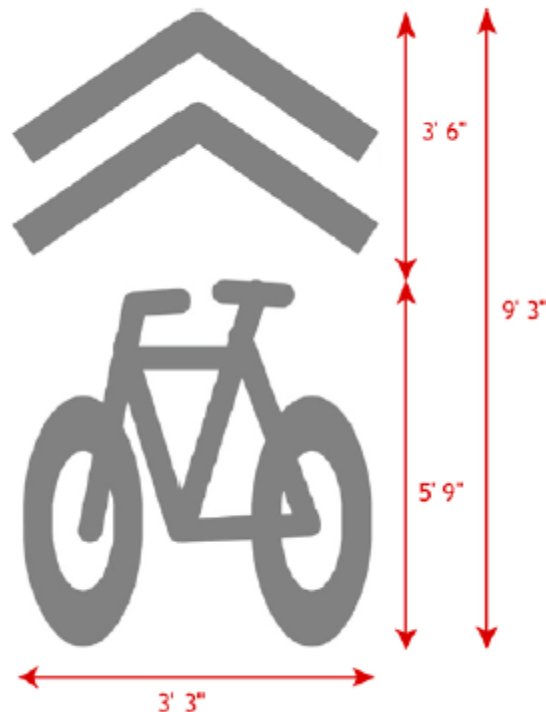
Option:

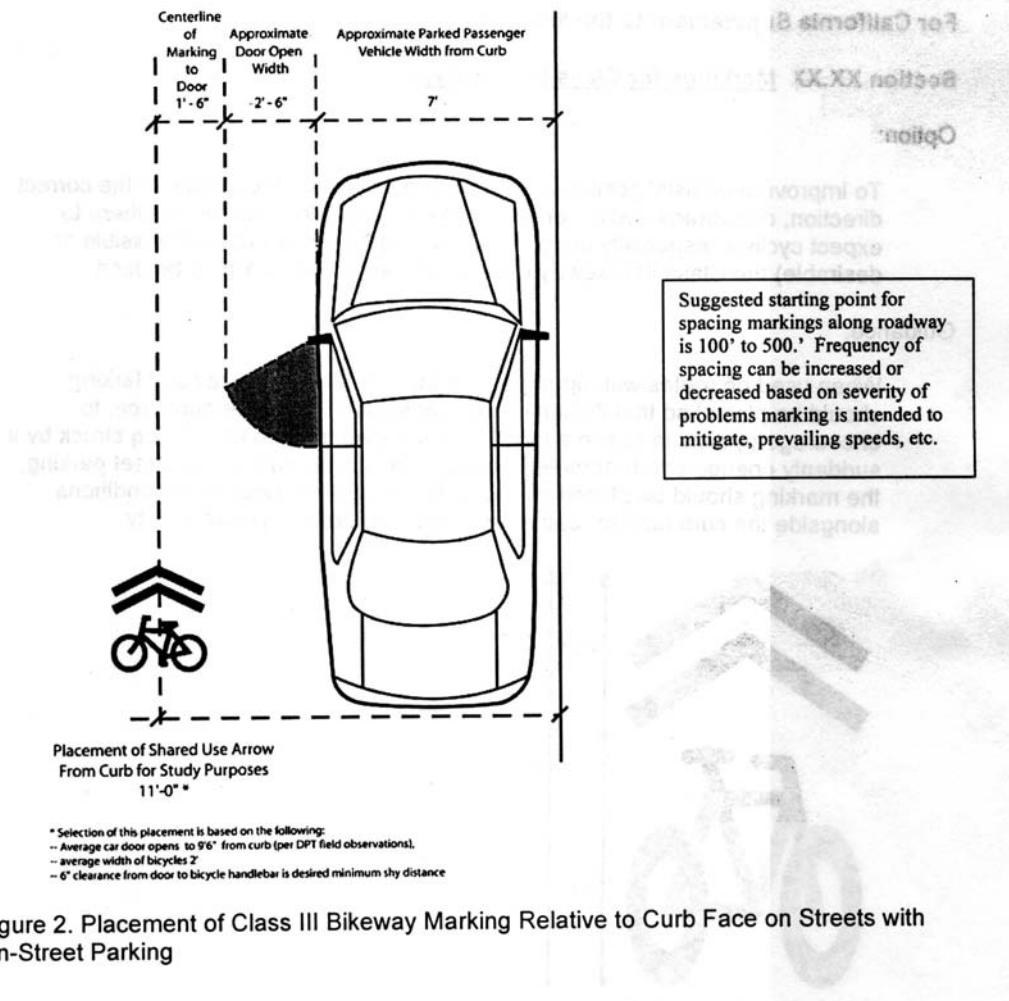
To improve bicyclists' positioning on roadways, encourage cycling in the correct direction, discourage cycling on sidewalks, and to inform motorists where to expect cyclists (especially on roadways where bike lanes are not possible or desirable) the Class III Bikeway Marking shown in Figure 1 may be used.

Guidance:

When used on routes with on street parking, the Class III Bikeway Marking should be placed so that its centerline is at 11' from the curb to face, to encourage cyclists to ride in a location that prevents them from being struck by a suddenly opened car door (see Figure 2). On streets with no on-street parking, the marking should be placed so that it directs cyclists away from conditions alongside the curb face or road edge that compromise cyclists' safety.

**Figure 9C-107. Optional Shared Lane Marking**





Chairman Fisher apprised the Committee and audience that he has spoken with the national bicycle committee and there are ongoing experiments underway in other states, such as Colorado and Chicago. The national committee would like to see results from other states before making a final decision. He suggested seeing the guidance from the national committee to keep uniformity. He asked Mike to initiate dialogue with national Committee so a final decision could be made as earliest.

Jacob pointed out discrepancy in the overall height of the BPM shown on the handout versus the illustration shown in January 22, 2004 meeting minutes.

Mike responded that be a typo error.

#### Public Hearing:

#### 99-11 MUTCD Adoption by Caltrans

Chairman Fisher stated that the agenda item 99-11 MUTCD adoption along with California Supplement was placed on the agenda during the year of 1999 and asked Gerry Meis to provide a summary and status on the process of MUTCD adoption along with California Supplement.

Gerry Meis stated that a few years back he initiated a discussion within the Caltrans and with the CTCDC members in regards to the adoption of Manual on Uniform Traffic Control Devices" (MUTCD) along with California

Supplement. He believes that the motorists should see similar type of traffic control devices when they travel from one state to another state. The California will be different in certain cases, because of the legislation's, however the focus should be to keep the uniformity throughout the nation as much as possible. Gerry invited Johnny Bhullar, who was primarily responsible for the task to provide update to the Committee members, audience and answers any questions if they might have. Gerry stated that Johnny has done outstanding job and he deserves applause from everyone present in today's meeting.

Johnny requested that the CTCDC make recommendation to Caltrans for the adoption of MUTCD 2003 along with California Supplement (as posted on the Supplement web site) as the standard for all official traffic control devices, in accordance with Sections 21350 and 21400 of the California Vehicle Code.

Johnny briefly discussed the history of Caltrans Traffic Manual and added that at the early fifties it was known as a Maintenance Manual, in sixties it was known as a Planning manual and in seventies it was known as a Traffic Manual. This item was placed on the agenda for the July 22, 1999 meeting as a "discussion item", adoption of the MUTCD in California. Since the MUTCD was undergoing a rewrite and was expected to be released by December 2000 this item was tabled. At the November 9, 2000 meeting, CTCDC was informed that Caltrans had decided to adopt the MUTCD and would provide more details in future meetings.

During the 2001 and 2002 years, a section by section comparison was made between the Caltrans Traffic Manual and the MUTCD 2000. Some other publications included in this review were Caltrans Traffic Sign Specifications, Caltrans new policies and internal memos, CTCDC's Light Rail Traffic Manual, Caltrans Highway Design Manual Chapter 1000 (Bicycles), portions of Caltrans Maintenance Manual, Caltrans Ramp Meter Design Manual and Caltrans HOV Guidelines.

Starting in early 2003, draft texts were prepared for each part of the California Supplement and submitted to CTCDC and Caltrans internal advisory committee for review. To help the review process, further discussions were held in two separate workshops held over a period of 4 days with CTCDC members in July and September, 2003. Based on these reviews, discussions and recommendations, the draft text was finalized for all parts and made available and open to the public for comment in November 2003, through the California Supplement web site. The draft text was further corrected and finalized based on the public input through the public comment period, which closed on December 31, 2003.

Although the draft text for the California Supplement to the MUTCD 2000 was completed in 2003, it was decided (at the January 22, 2004 CTCDC meeting) to adopt the MUTCD 2003 Edition (which had recently been released by FHWA) rather than the 2000 Edition. This resulted in postponing the MUTCD adoption for California to May 2004. A CTCDC workshop was held in Sacramento on March 25 and 26, 2004 to discuss the 2003 Edition changes. Based on these workshop discussions, the draft text for the California Supplement has been finalized and made available and open to the public for comment through the California Supplement web site.

Johnny informed that to satisfy the public comments period requirement, the draft text would be open for comments until May 16, 2004. Any editorial comments will be incorporated, however any comments regarding the policy change will be brought back to the Committee for review and action.

Johnny added that he along with Matt Schmitz, FHWA, would be going throughout the State to provide training to the traffic engineers, Caltrans Districts, ITE on the use of MUTCD 2003 along with California Supplement. The local agencies will be invited to attend these training so they could use these two documents without any problem.

Farhad Mansourian stated that the Marin County Public Works Directors meets every month, would you be available to attend one of the meetings and educate on the use of these two documents?

Johnny responded that he is open to any invitation as long as there is an appropriate time allocated for presentation.

Gerry added that he would make Johnny available as asked by Farhad to attend Public Works Directors meetings. The goal is to familiarize as many engineers as possible on the use of California Supplement with the MUTCD 2003.

Farhad Mansourian stated that on May 20, 2004, Caltrans will adopt the MUTCD 2003 as amended by the California Supplement, it means, after May 20, 2004, that will become standards for all the official traffic control devices used in California.

Johnny responded that is correct and Caltrans will post this information on the MUTCD Supplement web site

Chairman Fisher stated that the Committee is set to make a historical change by recommending Caltrans to adopt MUTCD 2003 as amended by the California Supplement and obsolete States' Traffic Manual. He asked whether Caltrans had given a formal determination to take the next step that would be to combine two documents to a single document.

Gerry responded that the ultimate goal is to make California Supplement thinner and combined both documents to a single document. However, at this time Caltrans do not know exactly when it will be accomplished.

Johnny added that his next task is to combine the work zone and school zone parts. These two parts will give him an overall picture about time frame to combine two documents to a single document. He added that by the next CTCDC meeting, he would be able to provide a time frame to complete this task.

Hamid asked if the Committee makes recommendation today for the adoption and public comments period is still open until the May 16, 2004, would this create any legality conflict?

Johnny responded that the Committees' recommendations would be to adopt MUTCD 2003 along with California Supplement as posted on the web site. Any editorial comments will be incorporated, however any significant comments which involves policy change will be brought back to the Committees' attention. It will take same process as any other revision, such as modification or addition of a traffic control device. Secondly, revision and updates would be a continuous process as occurred in the past in regards to the Traffic Manual.

Hamid stated that Caltrans has done a tremendous job and he requested that Caltrans take to the next level by combining of the two documents to a single document. This could be achieved by partnering with other organizations, such as ITE, ATSSA, and AAA extra.

Johnny responded that as he stated earlier he will find out exactly how much time is needed to consolidate the two documents to a single document by the next CTCDC meeting.

Jacob Babico noted that the Caltrans website has posted California Supplement only, and we adopting MUTCD 2003 along with California Supplement; are we fulfilling the requirements of California Vehicle Code (CVC) 21400 by just posting California Supplement. Should not both the documents be posted side by side?

Gerry responded that the California Supplement web site linked to the MUTCD 2003 and both documents could be viewed side by side. Secondly, law requires Caltrans to discuss with local agencies and public before adopting standards and specification for a new traffic control device, the final decision and responsibility ends with Caltrans and Caltrans Legal Branch is in agreement with the process.

Chairman Fisher added that the Committee could assist Johnny to accomplish the task in combining of the two documents to a single document. Meanwhile, even this is not a perfect, but these two documents are dynamic documents and lot of efforts has been invested in the development of these two documents.

Chairman Fisher asked for public comments.

Gian Aggarwal, Alternate Members, stated that Johnny and CTCDC had done a great job. He stated that after the adoption of MUTCD 2003 along with California Supplement, there will be new traffic control devices introduced in California, due to the budget constraints, it will be a hardship on local agencies to comply with new standards immediately. He asked if there would be a grace period to comply with new devices.

Johnny responded that there would be a phase out period. If an agency proposed a new project or rehabilitation of an old device, then new standards will apply. Other wise, there will be a compliance period for the implementation of new devices, which varies from 0-15 years. Johnny informed that he will create a table identifying the compliance period for the implementation of new devices by the upcoming workshop (August 11, 2004) for the Committees' review and will be posted at the MUTCD Supplement web site.

David Royar, Consultant Highway engineering, provided written comments and briefly discussed with the Committee members. The California Supplement needs to be published as a combined document with the MUTCD. It is impossible to shuffle back and forth between two manuals. David noted that where there are special standards for state highways, the standard should also have the wording "local jurisdiction are exempt from this special standard." Also, all diagrams should be shown as the local jurisdiction method with special standards for state highways only noted on the plan.

David also raised following comments:

Part III Marking, figure 3A-106 and Section 3B.04 should have note that "raised reflectorized pavement markers shall not be used on right edge markings."

Figure 3B-103 and Section 3B-16 should have a note that "if a paved sidewalk exists, the limit line should be placed in advance of the unmarked crosswalk area." Vehicles need to initially stop before they enter the pedestrian area.

Part IV – Traffic Signals, Section C4B.01 through C4B14 should be removed from the supplement since they have nothing to do with the uniformity of traffic control devices, these procedures are an internal Caltrans document. Section 4D.15 add the wording "or suspended above" to the sentence: "A signal face, containing a circular green indication, may be located in or suspended above a far median only when:" the location of a signal head mounted in, or suspended above a far median creates the same degree of confusion to motorists.

Construction warning sign should be shown on the diagrams with the "Ahead" message, rather than the federal "XXX Feet" message. The "Ahead" message is approved and is what is typically used in California construction zones.

The 6C-2 Table for taper length need to call for 1000 foot tapers for freeways and expressways situations with speed limit of 55 MPH or greater.

Section 6F.42 Uneven Lane (W8-11) sign, the special guidance wording of "two inch or more" should be deleted. Vertical pavement discrepancies of ½ inch pose a problem for bicycles and 1 ½ inch pose a problem for motorcycles. Anytime there are uneven lanes the W8-11 sign should be used.

Johnny responded briefly to David's comments. Caltrans will not publish the California Supplement, it will be available at the web site and can be downloaded or printed by individuals. In regards to the reference of State highway only, during the CTCDC workshops this issue was discussed at a great extent and California Supplement is much-improved document than to the Traffic Manual. Caltrans is focused to eliminate wherever the difference exists in standards for the State highways and local streets. The comments related to the signal chapter will be forwarded to Electrical Branch and any unclear text will be revised. The project report process will be removed as we learn more.

David Parisi, Vice President, Bay Area Section of ITE San Francisco, stated that their organization has invited Johnny Bhullar and Matt Schmitz to attend one of the ITE meeting and both Johnny and Matt gave very informative over view on the use of MUTCD 2003 along with the California Supplement. There was a positive feedback from the members on their participation. He encouraged that this type of meetings should be used to spread out the words about the adoption of California Supplement. He added that they have planed to invite them again to provide information to their members on the use of new standards.



Matt Schmitz, FHWA, requested that the Committee made recommendations to Caltrans for the adoption of MUTCD 2003 along with California Supplement. He added that a tremendous efforts were put together by the Caltrans, CTCDC and FHWA in the development of MUTCD 2003 as amended by the California Supplement. He shared that there were excellent comments from the practitioners from local agencies, and he hopes that those individuals continue to review these documents and send their comments to Caltrans. He agreed that there are some concerns from individuals having a single document instead of two documents. He added that based on his personnel experience, he is not convinced having one document is better over the two documents. The time will tell us which way to go. Matt suggested that there is lot of work need to be done to make these two documents friendlier for the users. He advised the Committee that either to consider making a resolution or by writing in the minutes requesting Caltrans to retain Johnny Bhullars' services continued be working on this task.

Chairman Fisher asked Matt, whether any of the states has adopted MUTCD 2003.

Matt responded that some of the States follow strictly MUTCD and it means, by default, they do adopt the new version of MUTCD automatically. The States, who does have their Supplement, California will be the first one who adopts the MUTCD 2003 standards along with California Supplement.

Roger Bazeley, San Francisco Parent Teachers Association, stated that he has concern on the overall strength and weakness language used in regards to a school chapter, particularly on pedestrian's crossings. He stressed having better school signing and pavement markings. The intersection near the schools should have "yellow fluorescent" signs with lateral crosswalks. The transportation system should be more community friendly and the new technology should be used to provide information 24hours and 7 days a week. He added that the use of pedestrian countdown signal heads reduced congestion at the intersections in the City of San Francisco. He advocated more friendly devices be used to provide safer route to school and for pedestrian safety. He requested that the school chapter be published separately.

Johnny responded that Roget's comments are in general, if he provides us a specific comments/suggestions on any of the policy, then Caltrans will act accordingly.

Chairman Fisher opens discussion among Committee members.

Gerry Meis commented that since the printing of California Supplement in house is not possible due to the budget constraints, he invited that any organization could print and sell California supplement similar to the federal manual (MUTCD) which is printed and sold by different organizations.

Farhad Mansourian stated that he would propose four different motions in regards to this item. One of them will be an adoption of MUTCD along with California Supplement and other threes would be as a request to Caltrans on different issues which are tied to the new documents.

Motion: Moved by Farhad Mansourian, seconded by Ed von Borstel, recommend Caltrans to adopt MUTCD 2003 and the California Supplement as a standard for all the traffic control in according to the CVC 21350 and 21400.

Chairman Fisher asked for discussion on the motion.

Chairman Fisher suggested rewarding the motion, to adopt MUTCD 2003 as amended by the California Supplement.

Farhad agreed with the revised language.

**Motion:** Moved by Farhad Mansourian, seconded by Ed von Borstel, recommended Caltrans adopt MUTCD 2003 as amended by the California Supplement as a standard for all the traffic control devices in according to the CVC 21350 and 21400.

Chairman Fisher inquired about the "status of Caltrans actions on the past items", such as 01-1, 01-6, 00-4 and 02-3.

Gerry Meis asked Devinder Singh, Secretary CTCDC, to provide update on Chairman Fishers' comment. Devinder responded that item 01-6 has been incorporated in the Supplement and other three items (01-1, 00-4, and 02-3), Caltrans will act shortly and inform the Committee about their actions.

Jacob **reiterated** that Caltrans should come up with a time frame to consolidate two documents to a single document which will be friendlier to users. He added that there are some sections in the Supplement that required editorial changes for clarification

Farhad Mansourian added that this is a living document and it will be constantly changed and updated by Caltrans with the assistance of CTCDC.

Chairman Fisher suggested that if there are any editorial changes considered necessary as pointed out by Jacob, the Committee authorized Caltrans to make those changes by May 20, 2004, before sending a adoption letter to the FHWA.

Hamid Bahodouri asked whether voting on the first motion has any bearing on the other motions.

Farhad suggested that the other motions are as a request to Caltrans to consider Committee's suggestions. They are not tied with this motion.

Hamid noted that as Gerry Meis earlier mentioned that due to the budget constraints it is not possible to consolidate two documents right away to a single document. In his opinion, all the effort invested in the development of California Supplement will be successful only if caltrans continue working on this task and make this document friendlier to the end users.

Jacob asked, would you not require a completed document as an attachment to the motion presented? He further added that California Supplement contains additions, subtractions or more clarification of the MUTCD 2003. In the past, engineers were looking one document which was Traffic Manual, now you must consult both documents for correct interpretation and that is a difficult practically.

Gerry Meis responded the motion is to adopt the MUTCD 2003 as amended by the California Supplement and as posted on the web site. Both documents are extensively reviewed by the CTCDC and by the public. Any editorial changes will be made with a good faith and any policy changes/suggestions from individuals or from local agencies will be brought back to the Committee for considerations. He added that he always consulted both manuals in past, even though Traffic manual was the only official document in California.

Chairman Fisher asked for other comments. There were none.

Motion was carried 8-0.

Farhad Mansourian suggested he will request the Committee to recognize services of Johnny Bhullar in this effort and he would like to propose a motion.

**Motion:** Moved by Farhad Mansourian, seconded by Ed von Borstel, requested to place a agenda item for the next CTCDC meeting, a "resolution of accommodation" for Johnny Bhullar for the tremendous job he has done in last three years to get this point.

Chairman Fisher asked discussion on the motion.

Gerry Meis offered his services to put together a resolution.

Farhad Mansourian added that he would help Meis in this effort.

Motion carried 8-0.

Farhad Mansourian presented third motion:

**MOTION:** Moved by Farhad Mansourian, seconded by Ed von Borstel, requested Caltrans to consolidate two documents to a single document and provide a time table, when that can be accomplished during the next CTCDC meeting.

Chairman Fisher asked for discussion on the motion.

Jacob Babico suggested to slightly change the wording as, “the Committee urged Caltrans to consolidate two documents to a single document as earliest as possible, but not later than the end of this year.”

Gerry Meis responded that he is not agreed with the restriction of timetable, however, the future task is to look into it. The first step is to combine work zone and school zone parts. That is a priority, because of the great demand from the end users. Gerry invited Matt Schmitz, FHWA, to add on this topic based on his experience with the other states.

Matt stated that he is not sure which is the perfect way, having a single document or two documents. He suggested that this should not be a barrier, the time will dictate us which way to go. He pointed that Texas has a single document.

Farhad asked Johnny Bhullar whether he would like to add on the consolidation topic.

Johnny Bhullar added that he will be working on to combined work zone and school parts, and that will give him a very good estimate about the time needed to combined two documents to a single document. He should have pretty good idea by the next CTCDC meeting. In addition, he will have few samples on the format to see which is the perfect way to consolidate.

Gerry Meis asked about the timetable to complete this task.

Johnny responded that he should have pretty good idea by the next meeting. Realistically, it can be achieved within a year, without any interruption it could be done by the end of this year. However next few months, he will be travelling through out the State with Matt Schmitz for presentation to traffic engineers on the uses of these two documents.

Chairman Fisher asked for other comments. There were none.

Motion carried 7-1. Gerry Meis abstained.

Farhad Mansourian stated that the fourth item is to consider compliance dates for the various new devices. He suggested having a discussion item for the next meeting or a workshop to discuss the compliance date. He asked Johnny whether he has an idea how this information will be disseminated to the public agencies.

Johnny responded that after the adoption of the MUTCD 2003 as amended by the California Supplement, he would be making a list of the new devices which will be adopted in this process and then the compliance date for each of the device. The Committee’s input is needed to finalize the compliance dates. If a particular device require extension beyond the compliance date, then Caltrans and Committee together will approach to the FHWA.

Chairman Fisher informed that Kevin Schumacher, California Public Utilities Commission (CPUC) has requested a half-day meeting with the Committee members to address issues related to the railroad pre-emption crossings. If the Committee is agreed having a “workshop” then, one-day workshop before the next CTCDC meeting could be used to address the compliance dates and CPUC comments in regards to the railroad pre-emption crossings.

Gerry Meis agreed having a workshop to address compliance dates and CPUC issues.

Jacob Babico asked that the comment period is open until May 16, 2004 and comments will be directed to Johnny, how this Committee will be involved in review of those comments.

Johnny responded that if comments were editorials, then, it would be incorporated and informed to the Committee members. If a comment is related to a policy change or it has major impact, then it will be bring back for Committees' consideration as an agenda item.

Chairman Fisher asked for other comments. There were none.

**Motion:** Moved by Farhad Mansourian, seconded by Merry Banks, recommended having a workshop day before the next CTCDC meeting to discuss the compliance dates for the implementation of the new devices.

Motion carried 8-0.

**Action:** Item completed. Caltrans will adopt the MUTCD 2003 as amended by the California Supplement on May, 20,2004. On other three suggestions Caltrans will work with the Committee to achieve better results from this task.

### **Request for Experimentation:**

#### **01-9 Proposal to Modify approved Experiment, "In-roadway Warning Lights (IRWL) at R/R Crossings"**

Chairman Fisher asked Gerry Meis to address agenda item 01-9, proposal to modify already an approved experiment with IRWL at the R/R crossing.

Gerry introduced Kent Christianson, UC Berkeley, to the Committee members and asked him to address proposal to modify an approved experiment for R/R crossings.

Kent Christianson, The Visual Detection Laboratory (VDL) at U.C. Berkeley, stated that he is requesting an approval to slightly change an already approved experiment with IRWLs at the R/R crossing. The proposal is to test a different flash pattern for two weeks and then switched back to the original approval. The approved experiment will use five red LED lights embedded in the roadway (protruding less than ½ ") near the highway-railroad grade crossing and three amber lights ahead of them in the approach lane. When a train approach the intersection all the lights flash simultaneously.

The pattern of two weeks proposal will be a "wig-wag" type pattern. The pattern starts with two lights coming on for 150 milliseconds. All lights are then off for 110 milliseconds. The remaining three lights (out of the five) that did not come on before now then come on for 150 milliseconds. All lights are then off for additional 110 milliseconds. The cycle then repeats. Note that it is "wig-wag" because the sequence alternates between "even" and "odd" lights. In other words, if the lights are numbered 1 through 5 looking left to right, then lights 2 and 4 light up, turn off and then (after a short gap) lights 1, 3 and 5 light up. They in turn go out and are followed by a short gap, etc.

Kent added that the VDL has been conducting research into whether spatial and temporal patterns of traffic warning lights can elicit a better driver response to those lights (e.g. a faster reaction time for braking) than "straight flashing" or a "constant" light. For example, the VDL research with the light bars on the rear of buses indicated that having the bus bar turn on in segments results in a faster reaction time to that warning, even though the segmented display takes longer to fully light the bar than the "all on at once" mode.

VDL would like to see whether various spatial/temporal patterns could improve reaction time in comparison to the standard pattern (simountaneously flashing). The objective behind the requested modifications is to extend these tests to the field.

Kent asked for approval of his request.

Chairman Fisher asked comments from Committee members.

Gerry Meis asked how the lights would be activated. How you will measure the success/failure of the experiment? The purpose is to improve drivers' reaction time, how you will measure that.

Kent responded that the train would activate the lights. To measure the success/failure part is difficult to analyze, however the driver reaction time will be a basic factor to determine which pattern get motorists attention.

Jacob Babico asked whether a red light flashing would confuse motorists, because it means stop and go.

Kent responded that the lights are consistent to the currently used flashing beacons, red with red and yellow with yellow. The red flashing lights are currently used at R/R crossing and if there is a confusion, it needed to address universally. The request is to use different flash pattern for two weeks to an already approved experiment.

Chairman Fisher asked that the proposal is to use a flash rate that turn light on 150 ms, off 110 ms and it will be repeated. The 2270 controller does not have the capability to turn lights on and off at that flash rate. Are you open to consider other flash rates that also work with the companion flashing beacons placed at the crossing? If you consider experiment with 100 ms on and off flash rate, and the wig-wag-flashing pattern is better than the simultaneously-flashing pattern, the agencies could use controller 2270 for wider implementations.

Kent responded that he followed the MUTCD Section 4L.02 guidelines for the flash rate. He could adjust the flash rate, if that is what the committee wants.

Hamid Bahadori stated that he agreed with Chairman Fishers' comments. The purpose of the experiment is to see which pattern get motorists better response. The minor change in the timing of a flash rate will not have much effect because the change will be very minor from 150/110 ms to 100/100 ms on and off. If the experiment is conducted with a flash rate which could be programmed with other controllers that will have vast application.

Unidentified speaker from VDL stated that the location does not have controller 2270, generally controller 2270 used for signal lighting. The controller for the embedded lights will be supplied by the LightGuard Incorporation, which give Variety of options for the flash rate. Other hand, he agreed with the suggested flash rate, because it would have wider implementation.

Kent agreed with the comments made by Chairman Fisher and Hamid Bahadori and added that he is open to the suggestion.

Merry Banks asked how many times the lights would be activated in a two-week periods.

Kent responded that he has not looked in that, but would not be too many activations.

Kevin Schumacher, CPUC, stated that the location does not have 2270 controller and the controller used for this experiment will be different controller.

Jacob Babico inquired that all the experiment locations are equipped with the highway crossing signal assembly flashing light type standard number 8, why standard number 9 was not considered (for readers clarification standard no 8 does not have a gate and standard number 9 doe have a gate).

Kent responded that the main experiment was approved two years ago and their proposal is to use two-week different flash pattern. He has no idea why standard number 8 was only considered, one of the reason could be that because there are no gates with the standard number 8.

Gerry Meis confirmed that was the only reason.

Chairman Fisher asked for other comments. There were none.

**Motion:** Moved by John Fisher, seconded by Hamid Bahadori, approved the experiment by changing the flash rate from 150/110 ms on/off to 100/100 ms on/off.

Chairman Fisher asked for discussion on the motion.

Chairman Fisher stated that if the wig-wag pattern of embedded lights proved beneficial, then the modified flash rate could be used in more general applications.

Kent agreed with the proposed flash rate timing.

Motion Carried 7-0.

**Action:** Item approved for experimentation.

### **Pedestrian Countdown Signal Heads (PCSHs)**

Chairman Fisher asked Merry Banks to address agenda item PCSHs.

Merry Banks introduced Frank Markowitz, City of San Francisco, and asked him to provide update on the experiment with PCSHs.

Mark Markowitz, Traffic Parking Manager, City of San Francisco, stated that the CTCDC gave authorization in 2000-01 to conduct experiment with PCSHs. Even though the Committee already had made decision on this device to be an official device in California, the City wants to keep their promise to provide results of the experiment. Mark provided a very brief summary on the results of the experiment.

Mark stated that the public viewed the PCSHs very favorably. The "post" pedestrian incidents were reduced at the intersections with PCSHs compare to the "before" incidents. The pedestrian were able to finish their crossing before signals turns to red. The devices did not encourage the pedestrian to start crossing during the pedestrian clearance phase. The City has positive maintenance and operation experience. The pedestrian finishing crossing on red dropped from 14% pre installation to 9% post-installation. Pedestrian running or aborting crossing dropped from 13% to 8% in 2001 and to 4% in 2003. There was slightly decrease in drivers entering intersection on red. About 92% pedestrians preferred countdown system compare to the conventional pedestrian signals

Mark added that the installation is very simple for the personnel. The pedestrian understands the system fairly well. The City has 660 intersection equipped with PCSHs and within two years the number will be 850. The City is considering testing animated eyes signals with countdown.

Gerry Meis asked when the countdown numerals go to zero, at the beginning of yellow or at beginning of green for the opposing traffic.

Mark responded that countdown numeral goes to zero at the beginning yellow phasing.

Chairman Fisher asked if countdown is equally valuable for the wide and narrow intersections.

Mark responded that the narrow intersections (25-30') would not be beneficial because the pedestrian clearance time would be too short. In his opinion and based on the study, the wider intersections would have better use of the countdown signals.

Chairman Fisher inquired that you had earlier stated using a animated eyes signals with countdown signal, is there a vendor who produce combined device?

Mark responded yes.

There were no other comments.

**Motion:** Moved by Merry Banks, seconded by Ed von Borstel, adopt the final report on the experiment with pedestrian countdown signal heads as submitted by the City of San Francisco. Motion carried 7-0

Action: Item completed.

**Note:** Please note that on May 20, 2004, Caltrans has adopted the MUTCD 2003 as amended by the California Supplement, therefore, the pedestrian countdown signal heads is a official traffic control device in California.

### **Off the Agenda Item**

#### **Internally Illuminated “No Left Turn” sign**

Chairman Fisher asked the California Partners for Advanced Transit and Highways (PATH) Program, Institute of Transportation Studies, University of California, Berkeley, to present “off the agenda item” “no left turn” sign.

Steven Shladover, Research Engineer, California Partners for Advanced Transit and Highways (PATH) stated that PATH Program with the coordination of Caltrans Division of Research and Innovation and with FHWA initiate a project to reduce intersection crashes by giving drivers information to help them better judge available turning gaps, potential conflicts, or potential traffic control device violation. The project is at a very early stage, however, the PATH want to share the concept with the Committee, because on latter stage a field test is needed to evaluate the effectiveness of the device.

The project is to use the intelligent transportation system (ITS) technology to sensors to detect approaching vehicle locations and speeds by using computer to predict gap and conflicts and initiate warnings. The longer term the project would be to develop wireless data communication to/from vehicles to activate warning devices, particularly looking dynamic and variable displays.

The project will be under the USDOT Intelligent Vehicle Initiative (IVI) research project. The project will be funded 80% by the FHWA with 20% from State funding. The future steps are to include field testing and vehicle-infrastructure cooperation. Virginia and Minnesota are also evaluating primary intersection conflict and their remedies. The California areas of interest are conflicts at signals with both directions having green signals and left turn on yield.

The PATH has testing system in the their facility and also collected pre observation data at the intersection of Shattuck and Hearst Street in Berkeley. The pre data will be collected by using a variety of devices such as loop detectors, video detectors and radar system. Collected data will be analyzed to predict gaps, conflicts or violations and information will be sent drivers via dynamic sign, signal controller. The experiment also evaluates the preferred warning system designs. A final product will recommend design for infrastructure elements and system, estimates of effectiveness in reducing intersection crashes.

Steven introduced his partner James Misener.

James discussed various sign concepts with the Committee members. The illustration can be viewed at the following website:

<http://path.berkeley.edu/~misener/CTCDC/>

Committee members thanked Steven Shladover and James Misener and PATH program for their efforts to find ways to reduce incident at the intersection related to the turning movements. Committee members suggested not developing too many variations of signs to confuse motorists. The warning type of sign may be an appropriate device. Committee members encouraged their efforts and stated that they will be looking forward to see the results from the field experiment.

**Adjourn:**

**Motion:** Moved by Gerry Meis, seconded by Merry Banks, to adjourn the meeting. Motion carried 7-0.

**Next Meeting:** The next meeting will be held on August 12, 2004 in Caltrans District 11 Office, 2829 Juan Street, San Diego, CA 92186.